

OPIC  
OFFICE DE LA PROPRIÉTÉ  
INTELLECTUELLE DU CANADA



CIPO  
CANADIAN INTELLECTUAL  
PROPERTY OFFICE

Ottawa Hull K1A 0C9

(21) (A1)	2,189,115
(22)	1996/10/29
(43)	1997/05/04

(51) Int.Cl. <sup>6</sup> A47L 15/44

(19) (CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Portioning Arrangement for a Detergent Dispenser

(72) Nürnberger, Stefan - Germany (Federal Republic of) ;  
Steiner, Winfried - Germany (Federal Republic of) ;  
Hesse, Peter - Germany (Federal Republic of) ;

(71) AEG Hausgeräte GmbH - Germany (Federal Republic of) ;

(30) (DE) 195 40 958.2 1995/11/03

(57) 20 Claims

Notice: This application is as filed and may therefore contain an incomplete specification.



Industrie  
Canada

Industry  
Canada

OPIC - CIPO 191

Canada

2189115

2189115

1           PORTIONING ARRANGEMENT FOR A DETERGENT DISPENSER

2                   BACKGROUND OF THE INVENTION

3           The invention concerns a portioning arrangement for  
4 controlled delivery of cleaning agents in tablet form in a  
5 dishwasher.

6           German Patent Application P 44 13 870.9 proposes a  
7 portioning arrangement for adding a cleaning agent to  
8 dishwasher. Such an arrangement has a storage unit for  
9 storing the cleaning agent tablets and a portioning  
10 arrangement for separating the cleaning agent tablets and  
11 for the program-controlled gradual release thereof. This  
12 above-mentioned arrangement slows the connection of the  
13 portioning arrangement with a control unit as well as the  
14 power supply.

15                   SUMMARY OF THE INVENTION

16           The task of the present invention is to specify a  
17 particularly simple design of the portioning arrangement  
18 for cleaning agent tablets and create an almost complete  
19 separation of the stored cleaner tablets from the wash  
20 chamber and the moist atmosphere prevailing in the wash  
21 chamber during operation.

22           The portioning arrangement includes a storage unit, a  
23 separating unit, and a lock chamber. A specific number of  
24 cleaning agent tablets can be removed from the storage unit  
25 and supplied to the lock chamber and then to a washing  
26 chamber. Cleaning agent tablets for several washing cycles  
27 can be stored with nearly complete separation from the  
28 moist atmosphere of the washing chamber and supplied to the  
29 washing liquid under control of a wash program.

30           The portioning arrangement for cleaning agents in  
31 tablet form essentially includes a storage unit for storing  
32 cleaning agent tablets for several wash cycles and a

1 separating device. According to the washing process, the  
2 separating device removes at least one cleaning tablet from  
3 the storage unit, and feeds it to a lock chamber also  
4 included in the portioning arrangement. Preferably the  
5 portioning device also has a presenting unit into which the  
6 cleaning tablets are brought after passing through the lock  
7 chamber.

8 The storage unit includes a receiving device. After a  
9 supply container including this receiving device is opened,  
10 which preferably takes place from above by removing a  
11 cover, the cleaning agent tablets are manually filled into  
12 the receiving device.

13 Preferably the complete portioning arrangement of the  
14 dishwasher is removable, which facilitates filling,  
15 cleaning, and maintenance. The storage unit of the  
16 portioning device may be removed for especially simple  
17 filling.

18 An arrangement of at least two stacks, preferably  
19 three or four, is favorable for the storage of tablets for  
20 several wash cycles, advantageously at least ten wash  
21 cycles. The stacks may be in any position: standing,  
22 lying, or slanting.

23 A preferred design of the storage unit provides for a  
24 rotation-symmetrical arrangement of the stacks in a drum  
25 storage, which is designed so as to rotate around an axis  
26 parallel to the stack axis. A storage unit of this kind is  
27 thus designed as a kind of revolving drum.

28 In the case of a vertically oriented arrangement of  
29 the storage unit, the stacks in each case are fastened in  
30 position by a fixed element and a movably mounted element  
31 for fixing the tablets against movement in the transverse  
32 direction. In each case the tablets are removed from any  
33 stack by means of the separating device according to a  
34 program control.

35 A preferred design of the separating device consists  
36 of a pusher, which in the case of each separating process  
37 advances a tablet from the stack approximately in the

1 radial direction. As an alternative to this, the  
2 separating device also may be a gripper or tongs.

3 The tablet removed then is delivered to a lock  
4 chamber, which serves for the nearly complete separation of  
5 the storage unit from the moist atmosphere in the washing  
6 tank. After passing through this lock chamber the tablet  
7 is fed to a perforated platform or a perforated basket.  
8 This platform or basket is placed in the washing tank in  
9 such a way that the tablets contained therein are dissolved  
10 by the washing liquid, preferably by a spray jet striking  
11 the tablets.

12 For the case where more than one tablet is to be  
13 portioned per wash cycle, either the tablets are portioned  
14 one after the other in the way described above, or pass  
15 through the lock chamber together, after sequential  
16 separations, and are presented together.

17 The invention is explained in greater detail below by  
18 means of the drawings of a specific embodiment.

19 BRIEF DESCRIPTION OF THE DRAWINGS

20 Fig. 1 shows a schematic side elevation of a  
21 portioning device according to the invention;

22 Fig. 2 shows a side view of a storage unit for  
23 multiple stacks of cleaning tablets with a separating  
24 device;

25 Fig. 3 shows a top view of a storage unit for four  
26 tablet stacks; and

27 Fig. 4 shows a longitudinal section of a lock  
28 chamber.

29 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

30 Referring to Figs. 1 through 3, portioning arrangement  
31 for disposing large cleaning agent tablets 3 or small  
32 cleaning agent tablets 3' in a dishwasher includes a drum-  
33 like storage unit 1 for storing the cleaning agent tablets

2189115

1 3, 3' in four standing stacks. This storage unit 1, can be  
2 filled manually from above by removing a cover 5, which  
3 creates a gas-tight sealing of the storage unit 1 by means  
4 of a sealing element 7. The individual stacks are fixed in  
5 the transverse direction by means of a fixed V-shaped  
6 element 9 and a movably mounted element 11. The fixed  
7 element 9 shown has two orthogonal parts. The movably  
8 mounted element 11 is biased toward the tablets 3, 3'.  
9 This holding mechanism is designed in such a way that it is  
10 operable irrespective of the size of the tablets 3, 3'.

11 The entire storage unit 1 is capable of rotating  
12 around its middle axis 13. The process of separating a  
13 cleaning tablet 3, 3' is initiated by a rotation motion of  
14 the storage unit 1 around the middle axis 13, so that the  
15 stack, from which the tablet 3, 3' is to be removed, is  
16 positioned so that the tablet 3, 3' to be portioned is  
17 accessible to a separating device 15.

18 The tablet 3, 3' then is separated by moving it from  
19 the appropriate stack in an approximately radial direction  
20 by means of the separating device 15 designed as a pusher.  
21 The movement can be either on a linear track or a bent  
22 track.

23 The tablet 3, 3' provided is brought into a lock  
24 chamber 17 having closable lower and upper lock walls 19,  
25 21. With the lower lock wall 19 in a closed position, the  
26 upper lock wall 21 opens to admit the tablet and is  
27 resealed gas-tight after the introduction of the cleaning  
28 agent tablet 3, 3'. As shown in Fig. 4, preferably at  
29 least the upper lock wall 21 passes along a bent track 23  
30 in a closing motion to a countersurface 25. This prevents  
31 faulty gripping of a gasket 27 mounted on the  
32 countersurface 25, which can occur and lead to leakages of  
33 the gasket 17 when using an alternatively possible sliding  
34 motion, between the gasket 27 and sealing surfaces.

35 Only after the sure sealing of the upper lock wall 21  
36 is the lower lock wall 19 opened and the cleaning agent  
37 tablet 3, 3' advanced. The tablet 3, 3' in this way

2189115

1 finally enters a perforated basket 29 in the wash chamber  
2 and at this point is struck periodically by a spray jet  
3 cleaning the material to be washed. In this way the tablet  
4 3, 3' is dissolved gradually, by means of which the  
5 cleaning substance is mixed with the washing liquid.

6 The embodiment of the invention shown and described  
7 are exemplary. Modifications are considered to be within  
8 the scope of the claims.

2189115

CLAIMS

WHAT IS CLAIMED IS:

- 1        1.    A portioning arrangement for dispensing cleaning  
2 agents in tablet form for a washer having a wash chamber  
3 characterized by the fact that the portioning arrangement  
4 includes a storage unit (1), a separating device (15), and  
5 a lock chamber (17), arranged so that a specific number of  
6 the cleaning agent tablets (3, 3') can be removed from the  
7 storage unit (1) by the separating device (15) and  
8 delivered to the lock chamber (17) and then to the washing  
9 chamber.
- 1        2.    A portioning arrangement in accordance with  
2 Claim 1, characterized by the fact that the tablets (3, 3')  
3 are stored in the storage unit (1) in at least two stacks.
- 1        3.    A portioning arrangement in accordance with Claim  
2 2, characterized by the fact that the tablets (3, 3') are  
3 stored in the storage unit (1) in approximately vertically  
4 arranged stacks parallel to one another.
- 1        4.    A portioning arrangement in accordance with  
2 Claim 2, characterized by the fact that the storage unit  
3 (1) comprises a drum storage.
- 1        5.    A portioning arrangement in accordance with  
2 Claim 4, characterized by the fact that the storage unit  
3 (1) is adapted for rotating around an axis (13) parallel  
4 to an axis of one of the stacks.
- 1        6.    A portioning arrangement in accordance with Claim  
2 2 further comprising fixed elements and movably mounted  
3 elements for fixing the respective tablet stacks against  
4 transverse movement in the storage unit.



1           7. A portioning arrangement in accordance with Claim  
2 2, further comprising a holding mechanism for fixing each  
3 stack against movement in the transverse direction, the  
4 holding mechanism including a V-shaped groove (9) and a  
5 moveable pressing element (11).

1           8. A portioning arrangement in accordance with Claim  
2 7, characterized by the fact that the holding mechanism is  
3 operative irrespective of the size of the tablets (3, 3').

1           9. A portioning arrangement in accordance with Claim  
2 2, characterized by the fact that at least one tablet (3,  
3 3') per wash cycle can be removed from any stack of the  
4 storage unit (1) by means of the separating device (15) and  
5 delivered to the lock chamber (17).

1           10. A portioning arrangement in accordance with Claim  
2 9, characterized by the fact that the separating device  
3 (15) comprises a pusher that removes a tablet (3, 3') from  
4 a stack in an approximately radial direction.

1           11. A portioning arrangement in accordance with Claim  
2 9, characterized by the fact that the separating device  
3 (15) is designed as a gripper.

1           12. A portioning arrangement in accordance with Claim  
2 1, characterized by the fact that the lock chamber includes  
3 a lock wall (21) sealing the storage unit (1), wherein the  
4 lock wall (21) passes along a bent track (23) during  
5 opening and closing.

1           13. A portioning arrangement in accordance with Claim  
2 1, characterized by the fact that the tablets (3, 3') to be  
3 portioned are dispensed from the lock chamber to a  
4 perforated basket (29) exposed to washing liquid in the  
5 wash chamber.

1        14. A portioning arrangement in accordance with Claim  
2 1, characterized by the fact that the storage unit (1) can  
3 be removed from the portioning device.

1        15. A portioning arrangement in accordance with Claim  
2 2, characterized by the fact that the tablets (3, 3') are  
3 stored in the storage unit (1) in approximately  
4 horizontally arranged stacks parallel to one another.

1        16. A portioning arrangement in accordance with  
2 Claim 3, characterized by the fact that the storage unit  
3 (1) comprises a drum storage.

1        17. A portioning arrangement in accordance with  
2 Claim 15, characterized by the fact that the storage unit  
3 (1) comprises a drum storage.

1        18. A portioning arrangement in accordance with  
2 Claim 16, characterized by the fact that the storage unit  
3 (1) is adapted for rotating around an axis (13) parallel  
4 to an axis of one of the stacks.

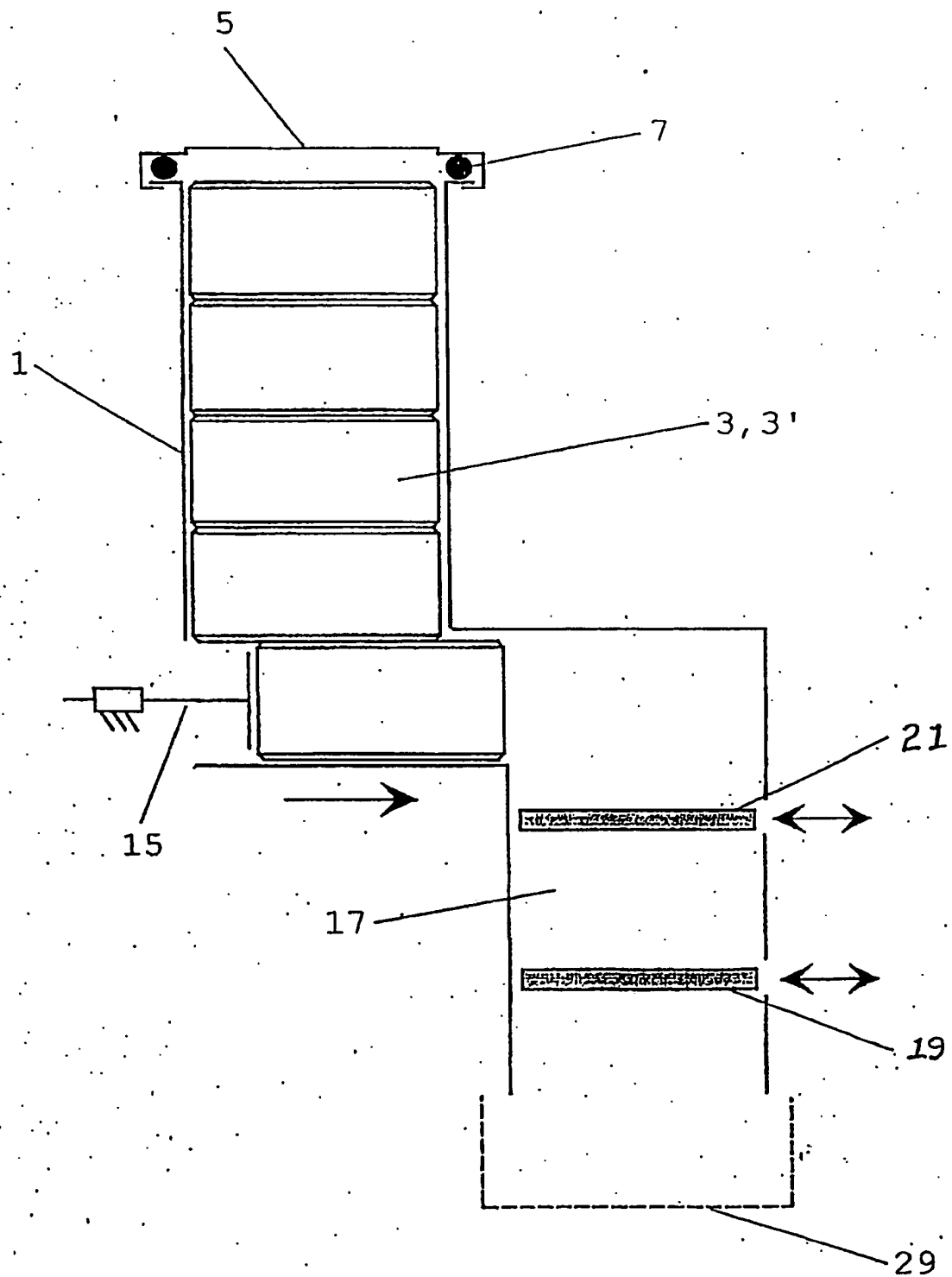
1        19. A portioning arrangement in accordance with  
2 Claim 17, characterized by the fact that the storage unit  
3 (1) is adapted for rotating around an axis (13) parallel  
4 to an axis of one of the stacks.

1        20. A portioning arrangement in accordance with Claim  
2 6, characterized by the fact that the holding mechanism is  
3 operative irrespective of the size of the tablets (3, 3').

2189115

EBHZ-95/17

Fig. 1

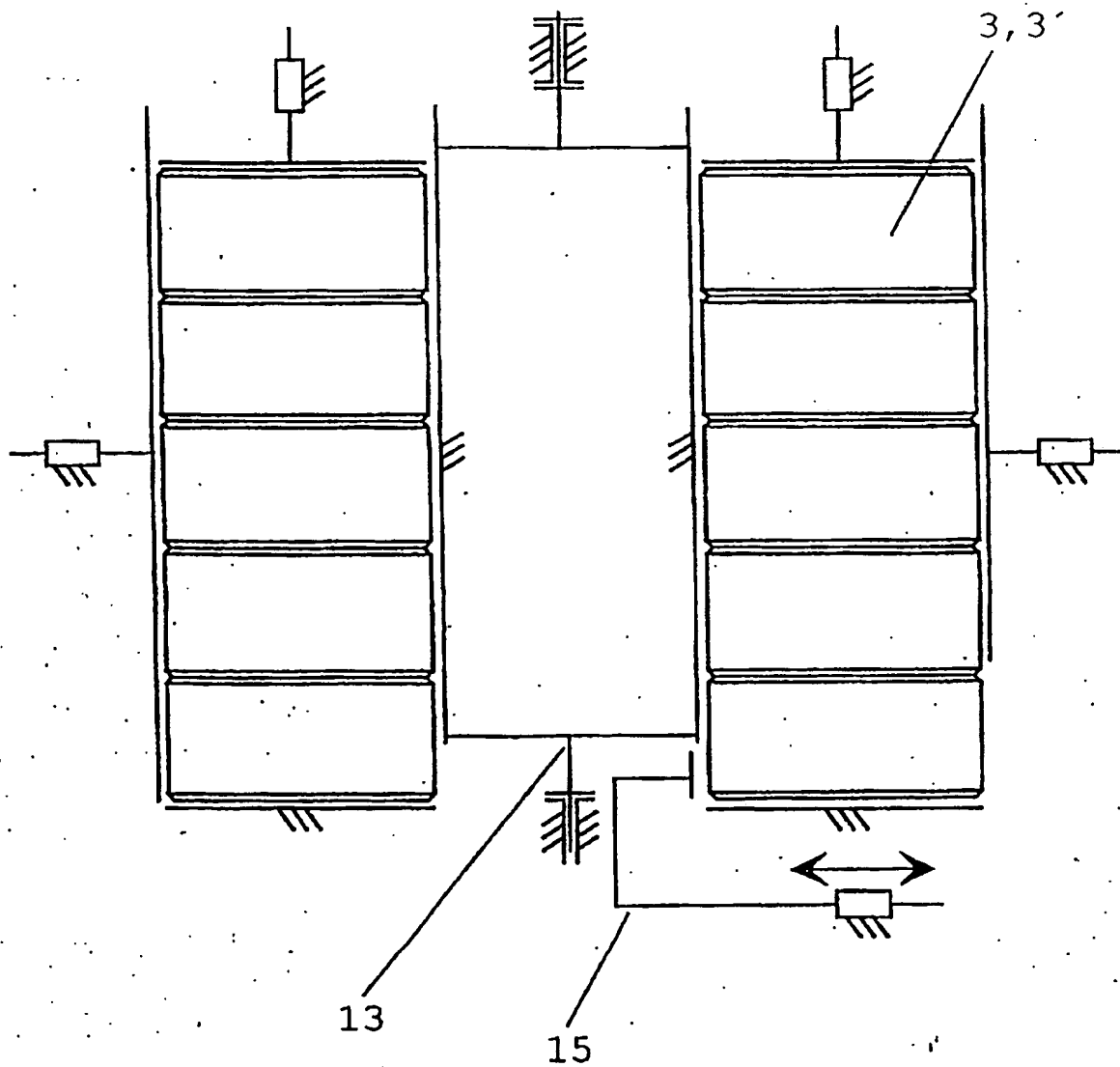


MOFFAT & CO.

2189115

EBHZ-95/17

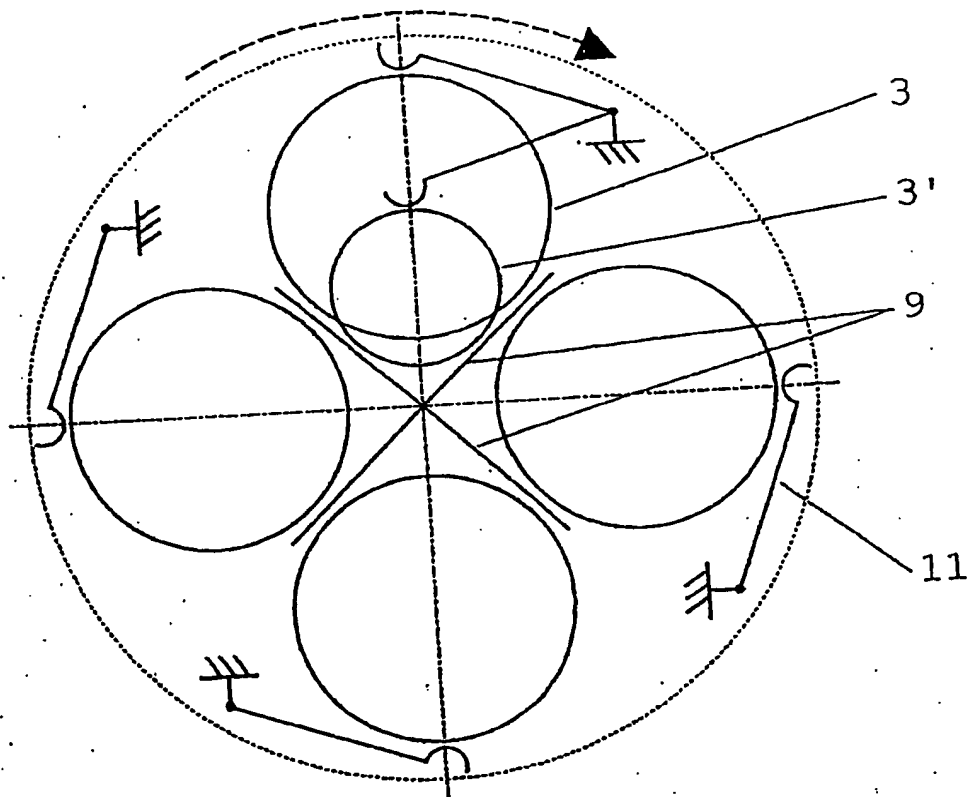
Fig. 2



MOFFAT & CO.

2189115  
EBHIZ-95/17

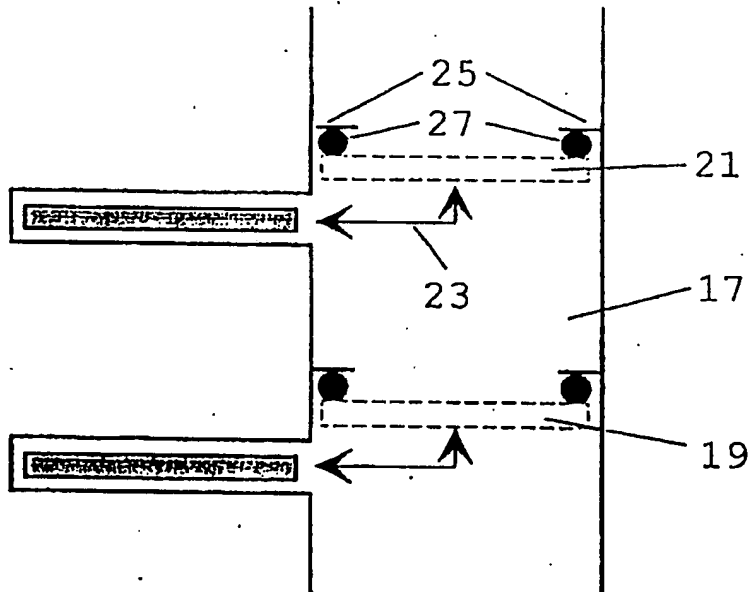
Fig. 3



MOFFAT & CO.

2189115  
EBHZ-95/17

Fig. 4



BEST AVAILABLE COPY

